

WHAT IS CLAIMED IS:

1. An optical combining device for combining the paths of at least two light beams having different polarizations, comprising:

a scroll direction change prism, disposed in the path of a first light beam, which changes a scroll direction of the first light beam so as to be the same as that of a second light beam; and

a polarized beam splitter, disposed in the path of the second light beam, which combines the first and second beams by selectively transmitting or reflecting an incident light beam according to the polarization direction thereof.

2. The optical combining device as claimed in claim 1, wherein the scroll direction change prism comprises:

a first reflection surface which receives and reflects the first light beam; and

a second reflection surface which is disposed at a right angle to said first reflection surface and which reflects the first light beam incident from the first reflection surface to proceed toward said polarized beam splitter.

3. An optical combining device for combining the paths of at least two light beams, comprising:

a scroll direction change prism, disposed in the path of a first light beam which changes a scroll direction of the first light beam so as to be the same as that of a second light beam; and

a beam shifter, disposed in the path of the second light beam, which shifts the second light beam so as to be combined with the first light beam incident from said scroll direction change prism.

4. The optical combining device as claimed in claim 3, wherein the scroll direction change prism comprises:

a first reflection surface which receives and reflects the first light beam;

a second reflection surface which is disposed at a right angle to the first reflection surface and which reflects the first light beam incident from said first reflection surface; and

a third reflection surface which reflects the light beam incident from said second reflection surface in a direction parallel to that of the second light beam incident from said beam shifter.

5. The optical combining device as claimed in claim 4, wherein said beam shifter comprises an incident surface arranged inclined with respect to an optical axis of the incident second light beam and an exit surface arranged separated a predetermined distance from and parallel to the incident surface, wherein said beam shifter shifts the second incident light beam through refraction due to the refractive index of said beam shifter.

6. The optical combining device as claimed in claim 4, wherein said beam shifter comprises first and second reflection surfaces arranged inclined with respect to an optical axis of the incident light beam, wherein said beam shifter shifts the second incident light beam through total internal reflection.

7. An optical combining device for combining a first and a second beam, comprising:

an Amici prism, disposed in the path of the first beam, which reverses a scrolling direction of the first beam; and

a beam shifter, disposed in the path of the second beam, which shifts the path of the second beam toward the path of the first beam.

8. The optical combining device according to claim 7, wherein said beam shifter is a refractive element which shifts the path of the second beam by refraction.

9. The optical combining device according to claim 7, wherein said beam shifter is a reflective element which shifts the path of the second beam by total internal reflection.

10. The optical combining device according to claim 7, further comprising a relay lens, disposed in the path of both the first and second beams, which refracts and converges the first and second beams.

11. An optical combining device for combining a first and a second beam having different polarization directions, comprising:

an Amici prism, disposed in the path of the first beam, which reverses a scrolling direction of the first beam; and

a polarization beam splitter, disposed in the path of both the first beam, reflected from said Amici prism, and the second beam, which combines the first and second beams by selectively transmitting or reflecting the first and second beams according to the polarization direction thereof.